RECEIVED
CENTRAL FAX CENTER
JAN 24 2005

Amendments to the Specification

Please amend the specification as follows:

[0005] In addition, the DWDMs 71 and 73 comprise many optical devices. Therefore the DWDMs 71 and 73 occupy too much space, are unduly heavy, and are costly. Furthermore, a plurality of long optical fibers L_5, L_6, L_{13}, L_{15}, L_{17},..., L_{23} are placed in the optical add-drop multiplexer 70. Thus the optical fibers L_5, L_6, L_{13}, L_{15}, L_{17},..., L_{23} are easily pulled apart or connected in error, resulting in high insertion loss in each joint.

[0030] FIG. 5 is a diagram showing several optical add-drop multiplexers 1 of the first embodiment connected in series. N optical add-drop multiplexers 1 as shown in FIG. 3A are connected in series to ~~complement~~ provide complementary adding and dropping processes of 1~N channels of optical signals. Each optical add-drop multiplexer 1 has a different central wavelength $\lambda_1 \sim \lambda_n$.

[0034] The first GRIN lens 200 comprises two opposite ends 201, 202. A slanted surface of the end 201 is near and parallel to the inmost surface of the end 101 of the first ferrule 100. That slanted surface is oriented at an angle of 6°～8° relative to a longitudinal axis of the first GRIN lens 200. An antireflection film is coated onto that slanted surface. The bandpass filters 301, 302 are attached on a flat surface of the end 202. The bandpass filters 301, 302 can be thin film filters having different central wavelengths λ_1, λ_2.

[0037] In use, the optical multiplexed signal from the input optical fiber 1110 is transmitted to the bandpass filter 301 via the first GRIN lens 200. An optical signal having a wavelength identical to the central wavelength λ_1 of the bandpass filter 301 is passed through the bandpass filter 301 and transmitted to the optical crystal 400. Then a direction of transmission of the optical signal is refracted by the optical crystal 400, and the optical signal is focused to the first dropping optical

fiber 6120 by the second GRIN lens 500. Other optical signals having other wavelengths are reflected by the bandpass filter 301 and focused to the end 1131 of the third optical fiber 1130. Then those other optical signals are input from the other end 1132 of the third optical fiber 1130, and transmitted to the bandpass filter 302 via the first GRIN lens 200. Then, an optical signal having a wavelength identical to the central wavelength λ_2 of the bandpass filter 302 is passed through the bandpass filter 302 and transmitted to the optical crystal 400. Then a direction of transmission of the optical signal is refracted by the optical crystal 400, and the optical signal is focused to the second dropping optical fiber 6140 by the second GRIN lens 500. Thus a function of dropping the two particular wavelengths λ_1, λ_2 of the optical multiplexed signal is ~~complemented~~ completed, and the other wavelengths of the optical multiplexed signal are reflected by the bandpass filter 302 and collimated to the output optical fiber 1120 of the first GRIN lens 200.

[0038] An optical signal having the wavelength λ_1 from the first adding optical fiber 6110 is transmitted to the optical crystal 400 via the second GRIN lens 500. A direction of transmission of the optical signal is refracted by the optical crystal 400, and the optical signal is collimated to the end 1131 of the optical fiber 1130 via the first GRIN lens 200. Then the optical signal is input again from the end 1132 of the optical fiber 1130, transmitted to the bandpass filter 302 via the first GRIN lens 200, and collimated to the output optical fiber 1120. At the same time, an optical signal having the wavelength λ_2 from the second adding end 6130 is transmitted to the optical crystal 400 via the second GRIN lens 500. A direction of transmission of that optical signal is refracted by the optical crystal 400, and such optical signal is collimated to the output optical fiber 1120 via the first GRIN lens 200. Thus, a function of adding the two particular wavelengths λ_1, λ_2 of the optical signal is ~~complemented~~ completed.

[0039] FIG. 7 is a diagram showing several optical add-drop multiplexers 1" in

accordance with the third embodiment of the present invention connected in series. N optical add-drop multiplexers 1" as decribed in FIG. 6 are connected in series to ~~complement~~ provide complementary adding and dropping of 2~2N channels of optical signals, with each optical add-drop multiplexer 1" having two different central wavelengths $\lambda_{2n-1} \sim \lambda_{2n}$.

[0041] It can be appreciated that in a variation by applying/adding one additional filter ~~unto~~ onto the lens 50 facing [[to]] the crystal 40, the whole system may become a symmetric arrangement and function as a mutual switch device. While preferred embodiments in accordance with the present invention have been shown and described, equivalent modifications and changes known to persons skilled in the art according to the spirit of the present invention are considered within the scope of the present invention as defined in the appended claims.